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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,862	02/19/2002	Max Roth	032553-021	2349
21839	7590	02/23/2006	EXAMINER	
BUCHANAN INGERSOLL PC (INCLUDING BURNS, DOANE, SWECKER & MATHIS) POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			DUONG, THO V	
			ART UNIT	PAPER NUMBER
			3753	

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/049,862	ROTH, MAX
	Examiner Tho v. Duong	Art Unit 3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 23 November 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 9,11-13,17-19,22,23,26,30 and 31 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 30 is/are allowed.
- 6) Claim(s) 9,11-13,17-19,22,23,26,30 and 31 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

DETAILED ACTION

Receipt of applicant's amendment filed 11/23/05 is acknowledged. Claims 9,11-13,17-19,22-23,26 and 30-31 are pending.

Response to Arguments

Applicant's arguments filed 11/23/05 have been fully considered but they are not persuasive. Regarding reference to Kun, applicant's arguments have been very carefully considered but are not considered to be persuasive. Kun clearly discloses (column 4, lines 29-33) that copper material is one of the materials that can be used as heat exchanger wall. Furthermore, Kun discloses (figure 4 and figure A as in the rejection) every limitation of the rejected claims, wherein the circular indentation and the annular denticulation are indicated in Figure A. Kun further discloses (figure 1A and column 6, lines 37-42) that the mutual spacing (D) between the denticulations is from 5 mm to 63 mm, which is well overlapping with the claimed range. Regarding the method limitation of "annular denticulations compression molded", applicant is advised to see details of the 102/103 rejections against claims 8,10-14,17,19,22-23 and 26 under Kun and Kashiwada. Regarding reference to Kawashiwada'031, applicant's arguments have been very carefully considered but are not deemed to be persuasive. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Kawashiwada'031 was not relied on to disclose neither copper wall nor the mutual spacing between the denticulations. Reference to Kun was relied on to teach the modification of the material and the dimension for a purpose of

obtaining a relative high thermal conductive heat exchange wall and minimizing the resistance of flow while able to withstand the maximum differential pressure of which the channel wall is designed in its intended environment. Regarding to reference to Evans and Kashiwada'669, Evans and Kashiwada'669 were not relied upon to teach the detail structure of the heat exchange wall structure but the overall cooling system such as the radiator cooling system of a vehicle has a pump (Evans) and the cooling system having a pump and a water tank (Kashiwada'669). All modifications are for a purpose of helping the circulation and distribution of coolant within the cooling system.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 9 depends on the cancelled claim 8. Therefore, the scope of claim 9 is indefinite.

In view of the clarity issue of claim 9, the examiner is unable to determine whether claim 9 is novelty or inventive.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 3753

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10-14, 17, 19, 22-23 and 26 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kun (US 3,757,855). Kun discloses (figures 2a, 4, 4a and column 6, lines 37-47) a construction kit for a radiator cooling system comprising a plurality of heat exchangers (30); plug connectors (8) for the connection of the heat exchanger; and a tank (10), which is capable of containing hot water. The heat exchanger (21) comprising a two joined together copper walls, which has a thickness of 0.076-6.35 mm, forming a flow through chamber (32) for a heat transfer medium, the walls being joined together at a plurality of connecting points (22) inside a surface between edges of the heat exchanger, wherein the wall mesh with one another at the connecting points (Figure A). Kun further discloses that the annular denticulations are spaced apart at a distance D from 5 mm to 63 mm. The method of forming the device “punctuate fastened”, “compression molded annular denticulations” and “are produced by an upsetting-pressing process and without penetration of sheet metal used to form the walls” are not germane to the issue of patentability of the device itself. “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). In this case, the heat exchanger in the product-by-process claim is the same as or obvious from

the heat exchanger of the Kun, the claim is unpatentable even though the prior heat exchanger was made by a different process.

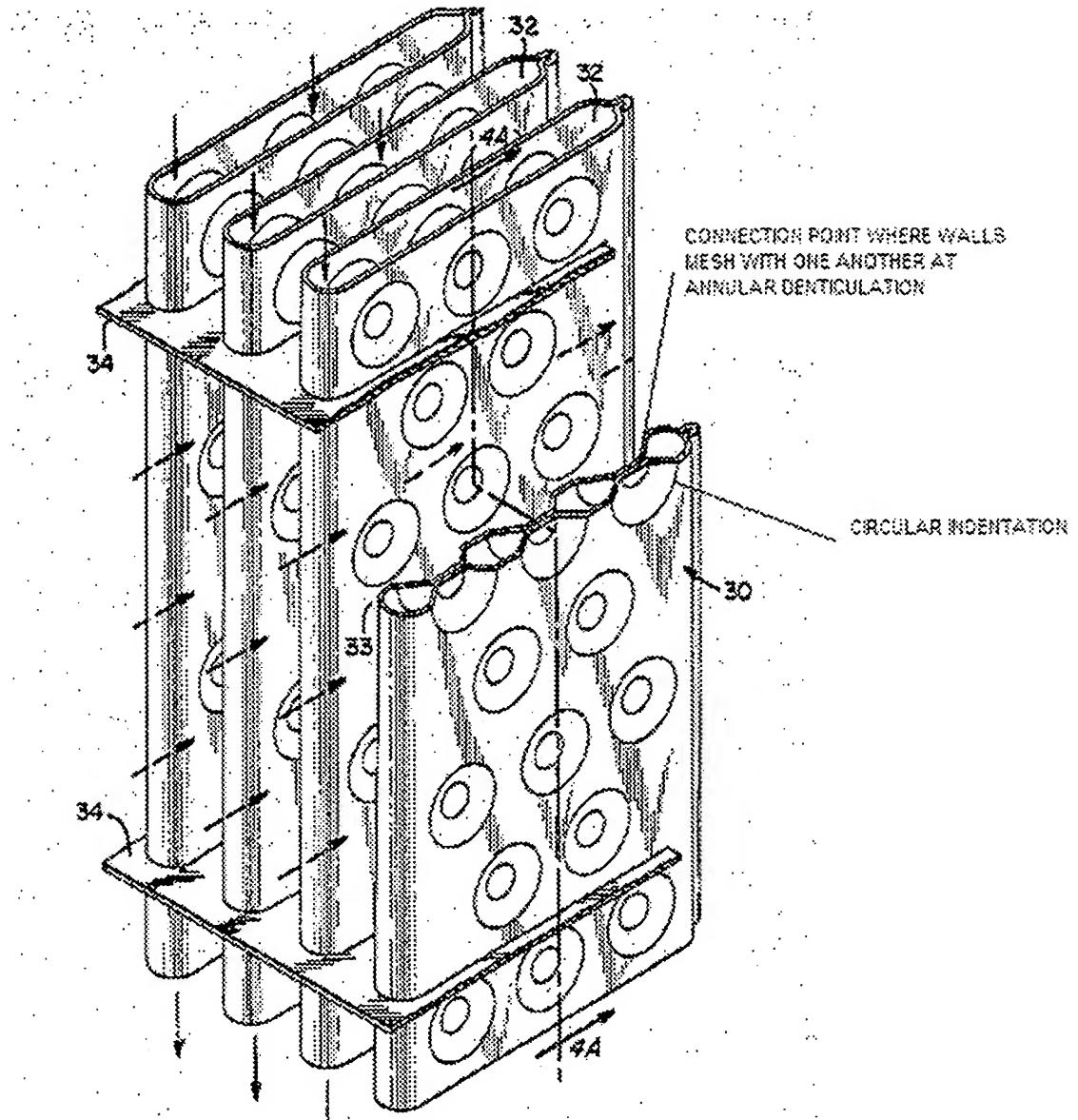


FIGURE A: THE MODIFIED FIGURE CORRESPONDES TO FIGURE 4 WITH LIMITATIONS SHOWN

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kun in view of Evans (US 4,550,694). Kun substantially discloses all of applicant's claimed invention as discussed above except for the limitation that the radiator cooling system of a vehicle has a

pump. Evan discloses (figure 1) a radiator cooling system for an engine, which has a pump (38) for a purpose of circulating a coolant to a radiator (42). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Evan's teaching in Kun's system for the purpose of circulating a coolant to a radiator.

Claims 10-14,17,22,23 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kashiwada et al. (US 4,997,031) in view of Kun et al. (US 3,757,855). Kashiwada discloses (figures 18-23) a heat exchanger system comprising a plurality of heat exchangers ; plug connectors (54) connecting the heat exchangers together; the heat exchanger comprising two joined together metallic walls (52) forming a flow-through chamber for a heat transfer medium, the walls being joined together at a plurality of connecting points inside a surface between the edges of the heat exchanger, wherein the wall mesh with one another at the connecting points inside the surface at annular denticulations (60) projected from the walls; wherein the denticulations are disposed inside an approximately circular indentation of the wall. Kashiwada does not disclose that the spacing between denticulations of from 10 to 50 mm or 20-30 mm; the thickness of the wall is from 0.5 to 0.65 mm and the wall is made of copper. Kun discloses (figures 1,4, column 4, line 42-62 and column 6, lines 37-47) a heat exchanger (21) comprising a two joined together metallic walls such as copper wall, which has a relative high thermal conductivity, has a thickness of 0.076-6.35 mm, forming a flow through chamber (32) for a heat transfer medium, the walls being joined together by a plurality of annular denticulations, wherein the annular denticulations are spaced apart at a distance D from 5 mm to 63 mm for a purpose of obtaining a relative high thermal conductive heat exchange wall and minimizing the resistance of flow while able to withstand the maximum differential pressure of

Art Unit: 3753

which the channel wall is designed in its intended environment. Since Kashiwada and Kun are both from the same field of endeavor and/or analogous art, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use Kun's teaching in Kashiwada's heat exchanger for a purpose of obtaining a relative high thermal conductive heat exchange wall and minimizing the resistance of flow while able to withstand the maximum differential pressure of which the channel wall is designed in its intended environment. The method of forming the device "punctuate fastened", "compression molded annular denticulations" and "are produced by an upsetting-pressing process and without penetration of sheet metal used to form the walls" are not germane to the issue of patentability of the device itself. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). In this case, the heat exchanger in the product-by-process claim is the same as or obvious from the heat exchanger of the Kun, the claim is unpatentable even though the prior heat exchanger was made by a different process.

Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kashiwada and Kun as applied to claims 12 and 26 above, and further in view of Kashiwada (US 4,893,669). Kashiwada'031 and Kun substantially disclose all of applicant's claimed invention as discussed above except for the limitation that the system having a pump and a water tank. Kashiwada'669 discloses (figures 6 and 13) a heat exchanger system similar to the system of

Kashiwada'031 and further disclose that system has a water tank (D) or (111) and a pump (229) for a purpose of circulating water within the system and distributing the water into the heat exchanger. Since both Kashiwada'031 and '669 are both from the same field of endeavor and/or analogous art, it would have been obvious to one having ordinary skill in the art, at the time the invention was made to use Kashiwada'669 in Kashiwada'031 for the purpose of circulating water within the system and distributing the water into the heat exchanger.

Allowable Subject Matter

Claim 30 is allowed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

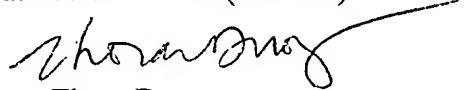
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 3753

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tho v. Duong whose telephone number is 571-272-4793. The examiner can normally be reached on M-F (first Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keasel Eric can be reached on 571-272-4929. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tho v Duong
Primary Examiner
Art Unit 3753



TD
February 17, 2006